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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	003824.P003
First Inventor or Application Identifier	Mark E. Pennell
Title	METHOD AND APPARATUS FOR AUTOMATIC FORM FILLING
Express Mail Label No.	EL034432654US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents

ADDRESS TO: Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

1. ☒ Fee Transmittal Form
(Submit an original, and a duplicate for fee processing)

2. ☒ Specification [*Total Pages* 15]
(preferred arrangement set forth below)
- Descriptive title of the Invention
- Cross References to Related Applications
- Statement Regarding Fed sponsored R & D
- Reference to Microfiche Appendix
- Background of the Invention
- Brief Summary of the Invention
- Brief Description of the Drawings (*if filed*)
- Detailed Description
- Claim(s)
- Abstract of the Disclosure

3. ☒ Drawing(s) *(35 U.S.C. 113)* [*Total Sheets* 9]

4. Oath or Declaration [*Total Pages* 3]
a. ☐ Newly executed (original copy)
b. ☐ Copy from a prior application (37 C.F.R. § 1.63(d))
(for continuation/divisional with Box 16 completed)
i. ☐ DELETION OF INVENTOR(S)
Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR §§ 1.63(d)(2) and 1.33(b).

5. ☐ Microfiche Computer Program *(Appendix)*

6. Nucleotide and/or Amino Acid Sequence Submission
(if applicable, all necessary)
a. ☐ Computer Readable Copy
b. ☐ Paper Copy (identical to computer copy)
c. ☐ Statement verifying identity of above copies

**NOTE FOR ITEMS 1 & 13: IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.28).*

ACCOMPANYING APPLICATION PARTS

7. ☐ Assignment Papers (cover sheet & document(s))
8. ☐ 37 C.F.R. § 3.73(b) Statement *(when there is an assignee)* ☐ Power of Attorney
9. ☐ English Translation Document *(if applicable)*
10. ☐ Information Disclosure Statement (IDS)/PTO - 1449 ☐ Copies of IDS Citations
11. ☐ Preliminary Amendment
12. ☒ Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)
13. ☐ *Small Entity Statement(s) ☐ Statement filed in prior application, Status still proper and desired
14. ☐ Certified Copy of Priority Document(s)
(if foreign priority is claimed)
15. ☐ Other: .....

16. **If a CONTINUING APPLICATION**, *check appropriate box, and supply the requisite information below and in a preliminary amendment:*
☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No: _____
Prior application Information: Examiner _____ *Group/Art Unit:* _____
For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

17. CORRESPONDENCE ADDRESS

☐ *Customer Number or Bar Code Label* *(Insert Customer No. or Attach bar code label here)* *or* ☒ *Correspondence address below*

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City	Los Angeles	*State*	California	*Zip Code*	90025
Country	U.S.A.	*Telephone*	(503) 684-6200	*Fax*	(503) 684-3245

Name (Print/Type)	Gregory D. Caldwell, Reg. No. 39,926		
Signature		*Date*	11/09/99

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Attorney Docket No.: 03824.P003

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

TITLE OF THE INVENTION:

METHOD AND APPARATUS FOR AUTOMATIC FORM FILLING

INVENTORS:

MARK E. PENNELL
ANTHONY MARTIN

Prepared by

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SEVENTH FLOOR
LOS ANGELES, CA 90025-1026
(503) 684-6200

This application claims the benefit of U.S. Provisional Application No. 60/107,791, filed November 10, 1998.

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to the field graphical user interfaces and more particularly to a method for entering information into a form on a screen display associated with an electronic device.

Description of the Related Art

Many a site on the Internet's World Wide Web (hereafter "web site". "web page" or simply "site") require the entry of various information in order to gain full access to the site and the services offered by the site. For example, many commercial sites require a user to set up an account and, in doing so, to provide various levels of personal information. Typically, the information is relatively repetitive from site to site—e.g., name, address, telephone number, electronic mail (email) address, credit card number, etc. In some cases, the information must be entered each time the user attempts to use the site. In other cases, an account is actually set up for the user and maintained -- the user needs only to enter the full information the first time the site is accessed.

An example of an account set up screen is provided in Figure 1. The figure illustrates a screen shot 100 of a web site accessed via, for example, web browser software executing on computing device such as a personal computer. The web site provides for online ordering, in this particular instance, of cookies. As can be seen, the user is invited to complete the shipping and

billing information by visiting each data field and entering the appropriate information (e.g., name 101, address 102, phone number 103, email address 104, etc.). Alternatively, at some web sites, the user may click on a button, hyperlink, etc., to log in and fill in ordering information automatically (presuming the user has a previously set up account.)

One method of addressing the inconvenience of repetitive data entry of account information is the so-called "wallet" technology. Using "wallets", a user may enter certain information (name, address, billing/credit card information) once and sites that run the particular wallet technology will be able to receive the information without requiring the user to reenter the data. Unfortunately, this technology requires sites to execute the wallet technology in order to allow a user to benefit from it. A diagram 200 illustrating a particular embodiment of the wallet technology is shown in Figure 2.

One other method of addressing the inconvenience of repetitive data entry is the so-called "type-ahead" technology in which the user's computing system attempts to "remember" certain information and, if a user starts to type a sequence of characters using, for example, a keyboard or other character input device, the system attempts to recognize the character sequence and complete the sequence. For example, if the user named John Smith starts to type his name in a name field, the system may recognize the user is typing "John Smith" after the user has only typed "Joh" and automatically fill in the remaining "n Smith".

Unfortunately, the type ahead technology is limited in that it may or may not correctly recognize the phrase being typed and implementations are typically browser software dependent. Moreover, the type ahead technology requires the user to independently visit each field in a form, rather than filling in multiple fields with a single click.

Thus, it would be useful to provide a method and apparatus which reduces the inconvenience of repetitive data entry. It would be particularly useful to provide a method and apparatus which was not browser dependent and which did not require implementation by each individual web site in order to allow a user to benefit from it.

BRIEF SUMMARY OF THE INVENTION

A method and apparatus providing for improved automation for entry of data in forms displayed on a screen via a web browser.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

Fig. 1 is an exemplary form displayed by a web browser.

Fig. 2 illustrated a prior art wallet technology.

Fig. 3 illustrates a network as may utilize an embodiment of the invention.

Fig. 4 illustrates a form helper window as may be utilized by an embodiment of the present invention.

Fig. 5 illustrates a form helper window as may be utilized by an embodiment of the present invention.

Fig. 6 illustrates a form helper window as may be utilized by an embodiment of the present invention.

Fig. 7 illustrates a form helper window as may be utilized by an embodiment of the present invention.

Fig. 8 illustrates a login helper window as may be utilized by an embodiment of the present invention.

Fig. 9 illustrates a login helper window as may be utilized by an embodiment of the present invention.

For ease of reference, reference numerals in the accompanying drawings typically are in the form "drawing number" followed by two digits, xx; for example, reference numerals may be numbered 3xx. In certain cases, a reference numeral may be introduced on one drawing and the same reference numeral may be utilized on other drawings to refer to the same item.

DETAILED DESCRIPTION OF THE INVENTION

Figure 3 provides a diagram illustrating an overall system implementing an embodiment of the present invention. In the described embodiment, a user computing device, such as user computer 301, is automated with browser automation software 302. The browser automation software interfaces with any of a number of web browsers 303 such as Netscape Navigator available from Netscape Corporation of Mountain View, California or Internet Explorer available from Microsoft Corporation of Redmond, Washington. As a user moves between web pages in the World Wide Web using browser 303, the browser automation program 302 communicates with the browser and determines the Universal Resource Locator (URL) of the web site 306 being browsed. In certain embodiments, functionality of the browser automation program 302 may be added to the browser program 303 rather than executing the automation program 302 as a separate executable program.

In the described embodiment, the browser automation program 302 may gain knowledge of the format of a form encountered on any number of web sites. For purposes of this invention, a web site for which the format of the form has been learned by the browser automation program 302 is termed a "scripted" site. One method for the browser automation program to gain this knowledge is for the user to have previously filled out the same form. The browser automation program 302 then associates the content and order of the fields for the form with the content of personal data in the user database 304 (e.g., the program 302 learns that the field named "Name" on a particular form should be associated with the user's name in the user database 304.)

A second method for the browser automation program to gain this knowledge is for the form to have been analyzed and information stored regarding the fields and expected contents. This may be done, for example, for popular or well known web sites that utilize forms. The

information may be stored locally on each user's computer 301 or may be stored at a central location accessible to the user via network 307, such as the browser automation home site 305.

In an embodiment that stores this information at the home site 305, when a new URL is encountered, the home site 305 is contacted over the network 307. (It should be noted that the network could be the Internet or an intranet). In certain embodiments, information may be stored on the user's computer allowing local identification of which forms are stored at the home site 305. For example, a hash code may be developed to allow local (at the user's computer) determination of whether the form is scripted, i.e., whether information regarding the format of the form is stored, at the home site.

In addition, when encountering a form, whether for the first or a subsequent time, the browser automation program 302 may analyze the underlying structure of the form to determine if there are fields for which data is available from the user database 304. Typically, this process may involve analyzing the HyperText Markup Language (HTML), eXtensible Markup Language (XML), or other underlying code received from the visited web site 306.

Regardless of the method, if a script is available for the form, a pop up dialog window 401 is displayed in conjunction with the visited web site. An example in Figure 4 shows pop up window 401 overlaying a portion of a visited web site, for which a partial screen shot 100 is illustrated. The pop up window 401 allows the user to automatically place the information displayed in the fields of the pop up window into the corresponding fields of the form provided at the web page that is displayed on the screen of the user's computer. The user may supply all of the listed information in pop up window 401 or may modify some or all of it before supplying it to the form. Fig. 7 illustrates a web page form 100 filled in automatically by selecting the "fill in" button.

The pop up window 401 is better viewed with reference to Fig. 5. The user may supply the necessary information for the form provided at the scripted site by selecting the "fill in" button 402 of pop up window 401 (assuming a script exists for the form or alternatively the program 302 can gain sufficient knowledge of the form from analyzing the underlying HTML). The "fill in" button may be selected, for example, by performing a single click of a user input device such as a mouse. Alternatively, if the browser automation program 302 is unfamiliar with the form, the user is provided with the pop up window 601 shown in Fig. 6. (Fig. 6 does not illustrate the form for which information displayed in pop up window 601 may be supplied). Pop up window 601 generally is utilized the first time a form is encountered, so that the user may select each of the individual fields in the window. The user may double click on any one particular field in pop up window 601 to supply only that field of information to the form. That information is supplied, in particular, to the currently focused field in the form displayed by the browser. The browser automation software then causes the browser to automatically advance the focus to the next field in the form, in a step wise fashion. For example, if the user double clicks on the name field 602, only the name field is supplied from the pop up window to the name field 101 in the form displayed on screen 100. Alternatively, the user may "drag and drop" the contents of a field in pop up window 601 to the corresponding field in the form displayed on screen 100.

It should be further noted that the pop up windows illustrated in Figs 5 and 6 provide for multiuser support. For example, if multiple individuals share the same computer or web browser software, information about each user may be stored and subsequently accessed by supplying a uniquely identifying user name as input to the browser automation program 302. A user can select their data by specifying their name at field 403 in pop up window 401. In one

embodiment, field 403 is set up as a pull down list providing for the ability to select one of multiple users or to add a new user.

Moreover, for each user, any one of a number of profiles 404 may be provided from which to select to fill in the form. For example, the user may click on different profiles for home, work, or other. The multiple profiles allow for different sets of data to be input into the form, e.g., shipping address, phone, fax, and email address. For instance, depending on whether the user desires to communicate with the provider of the web site from home, work, or some other logical or physical designation, the user can select a desired profile to provide the appropriate information necessary for the web site provider to communicate or transact with the user accordingly. Fig. 4 illustrates the user's home profile is selected.

Yet further flexibility is provided by the browser automation program in utilizing pull down lists 405 for many of the fields of personal information accessible via pop up window 401. The user may specify one of multiple shipping addresses, phone numbers, email addresses, etc, for each profile. Thus, if a user maintains multiple offices and wishes to register or otherwise communicate personal contact information to a particular web site, the user may specify one particular office address. The user may then register at another web site using a different office address, by selecting a different office address via the pull down list associated with the shipping address field in the pop up window 401.

The information displayed in the pop up window 401 may have been initially supplied directly by the user or may have been learned as the user entered data in the normal course of filling out forms on web pages. The data is stored, typically in an encrypted format, on the user's computer 301 as user data in database 304. When the browser automation program 302 is executed, the user is asked for a password in order to access the encrypted data. In one

embodiment, the data is stored in a separate file which may be copied by the user and transported from computer to computer. In one embodiment, the data within the file 304 is retained with time stamp information. Using the timestamp information, the browser automation program 302 may merge two user data files, keeping the most recent information from both files.

In addition to assisting in completing relatively long forms as was shown in Figs, 4-7, the browser automation program 302 can assist with other types of forms 800. An example is provided in Figure 8 in which a "login helper" pop up dialog window 801 is displayed overlaying login screen 800. For ease of reference, dialog window 801 is shown separately in Fig. 9 as well. The browser automation program 302 has learned the user's login names and passwords for given web sites (in this case, the Microsoft msn Hotmail web site). One problem increasingly facing web users is the need to remember not only many passwords but also many user identifications, or "member names". The browser automation program stores in the user data file 304 the login member names and passwords (in an encrypted format) for sites for which the user has registered. When the user accesses the URL for a site, the user is presented with the login helper 801. Login helper 801 allows the user to select the appropriate member name and automatically then enters the correct password for the user. Of course, the user may have multiple member names for a particular site and the browser automation programs 302 store each of the various member names. The user may select the desired member name from a pull down list 802 in pop up window 801. Note also that, as in the case of pop up window 401, login helper window 801 provides for multiuser support, by allowing a user to select from one of multiple users via pull down list 803.

The user may be provided with the option of having the form filled in by selecting the login button 804, for example, via a single click of a mouse pointer device. Thus, for example,

when a login form is encountered, the browser automation program 302 may fill in the form with a minimum number of keystrokes or input from the user to log in to the site.

In one embodiment, changes to the information stored in the user database 304 causes notifications to be automatically sent to web sites which have been supplied with this data. Thus, for example, if the user changes the home address information, information may be sent to those web sites which have been previously supplied with the user's home address information notifying the web sites of the change. The appropriate scripts for updating this information may be stored, for example, at the home site 305.

ALTERNATIVES TO THE PREFERRED EMBODIMENT OF THE PRESENT INVENTION

There are, of course, alternatives to the described embodiment which are within the reach of one of ordinary skill in the relevant art. The present invention is intended to be limited only by the claims presented below.

Thus, what has been disclosed is a method and apparatus for entry of form data in a web browser.

CLAIMS

What is claimed is:

1. A method for entering form data in a browser comprising:

a) storing data for a user for retrieval;

b) encountering a form to be completed while browsing;

c) providing a dialog window to the user to allow the user to enter the stored data in the form.

ABSTRACT OF THE DISCLOSURE

A method and apparatus allowing for entry of form data in a browser. In the described embodiment, a browser automation program executes on the user's computer and communicates with a browser program in order to determine when forms are encountered.

The Order Form

Here's how it works. Fill out and submit the following form, making sure to properly fill in your credit card information. Or, if you prefer, you can print the form (using your browser's print option) and fax it to us at (609) 448-4079. Your order will be acknowledged via email or fax, and the cookies shipped within 24 hours.

Ship To Information

100

(•) Mr. ( ) Mrs. ( ) Ms.

First Name: [ ] 101

Last Name: [ ] 101

Address (line 1): [ ] 102

Address (line 2): [ ]

City: [ ]

State: [ ]

Zip: [ ]

Phone: [ ] 103

Fax: [ ]

Email: [ ] 104

Order Information

Send me [ ] dozen **Choco'runes** and [ ] dozen **Almo'runes.**

Please send them (•) priority (2-3 days) ( ) overnight.

I understand that I will be billed $12/dozen ecookies plus $3/dozen for priority shipping and $15/dozen for overnight shipping.

Credit Card Information/Bill To Information

First Name: [ ]

Last Name: [ ]

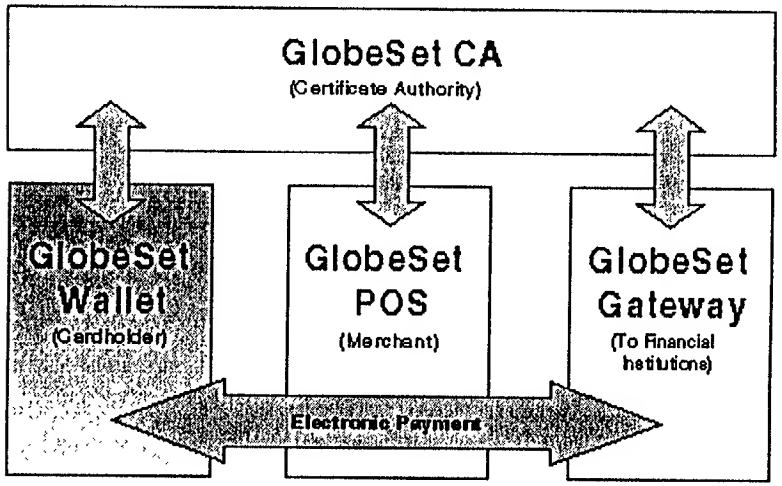
Address (line1): [ ]

Address (line 2): [ ]

City: [ ]

State: [ ]

FIG 1



200

GlobeSet Wallet resides on a cardholder's desktop computer, operating with popular browsers like Netscape Navigator and Microsoft Internet Explorer.

FIGURE 2

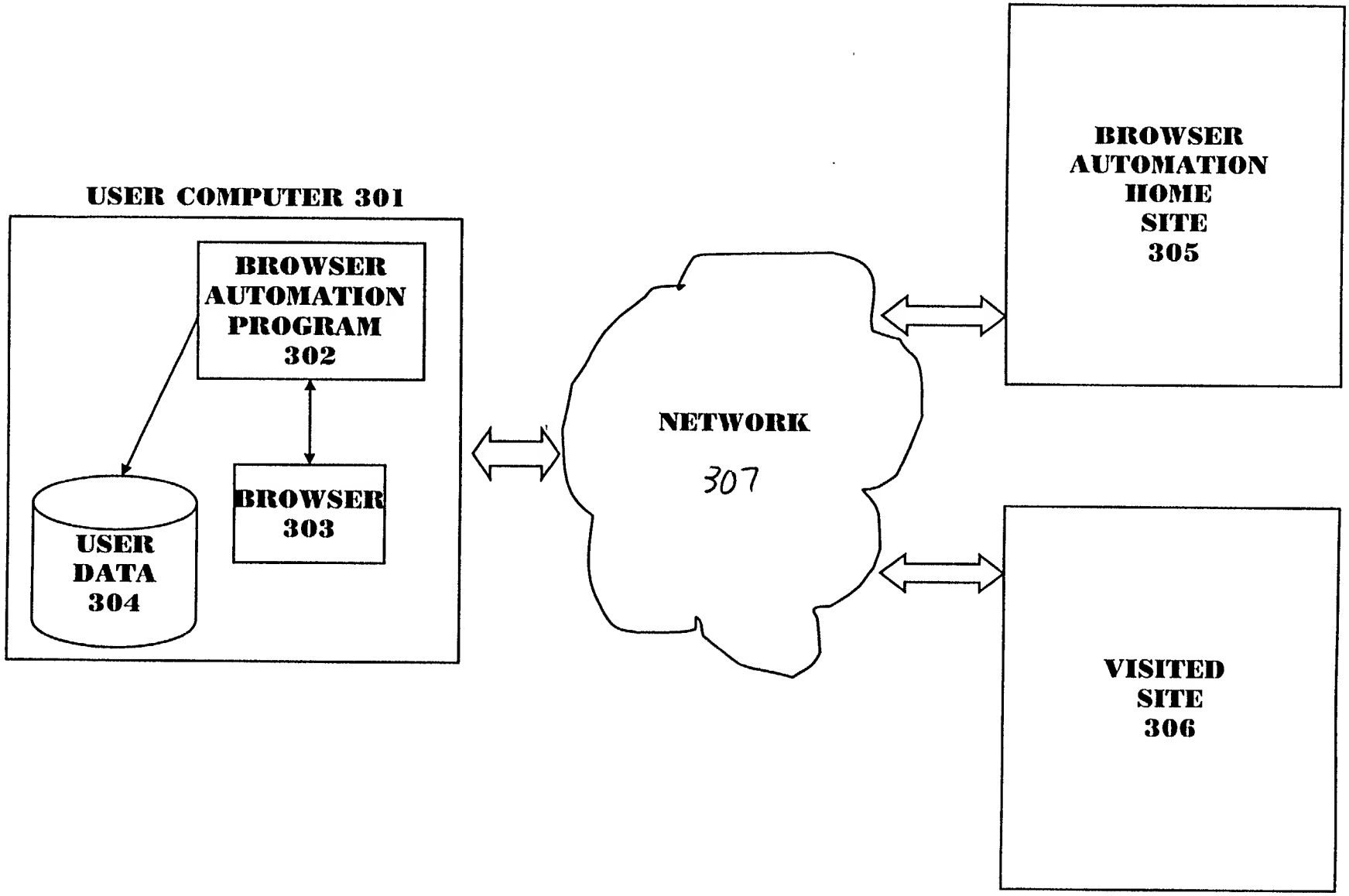


FIGURE 3

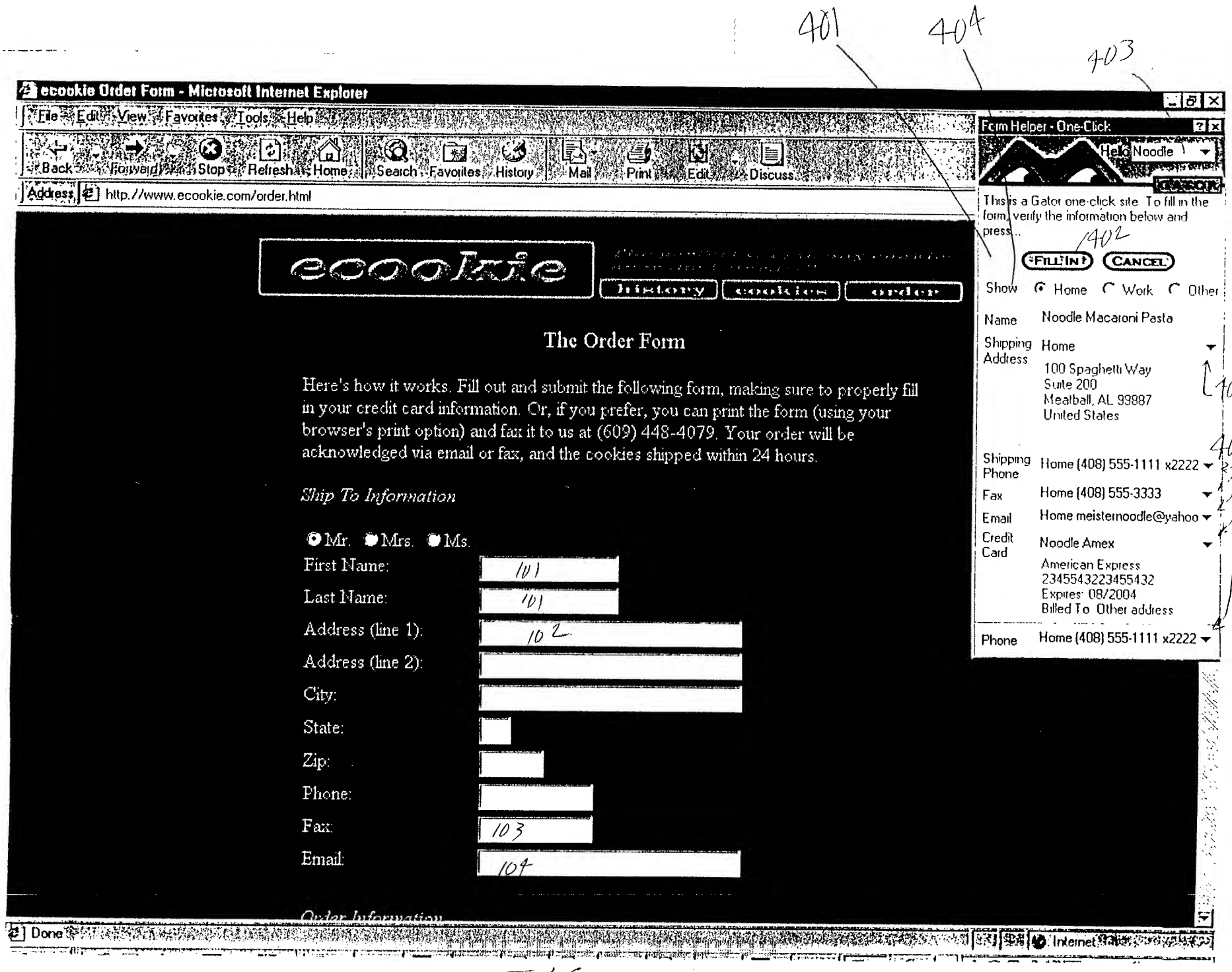

401
404
403
ecookie Order Form - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss
Address http://www.ecookie.com/order.html
Form Helper - One-Click
Help Noodle
This is a Gator one-click site. To fill in the form, verify the information below and press...
402
FILL IN
CANCEL
Show Home Work Other
Name Noodle Macaroni Pasta
Shipping Address Home
100 Spaghetti Way
Suite 200
Meatball, AL 99887
United States
405
Shipping Phone Home (408) 555-1111 x2222
Fax Home (408) 555-3333
Email Home meisternoodle@yahoo
Credit Card Noodle Amex
American Express
2345543223455432
Expires: 08/2004
Billed To: Other address
Phone Home (408) 555-1111 x2222
ecookie
history
cookies
order
The Order Form
Here's how it works. Fill out and submit the following form, making sure to properly fill in your credit card information. Or, if you prefer, you can print the form (using your browser's print option) and fax it to us at (609) 448-4079. Your order will be acknowledged via email or fax, and the cookies shipped within 24 hours.
Ship To Information
106
Mr. Mrs. Ms.
First Name: 101
Last Name: 101
Address (line 1): 102
Address (line 2):
City:
State:
Zip:
Phone:
Fax: 103
Email: 104
Order Information
Done
Internet

FIG 4

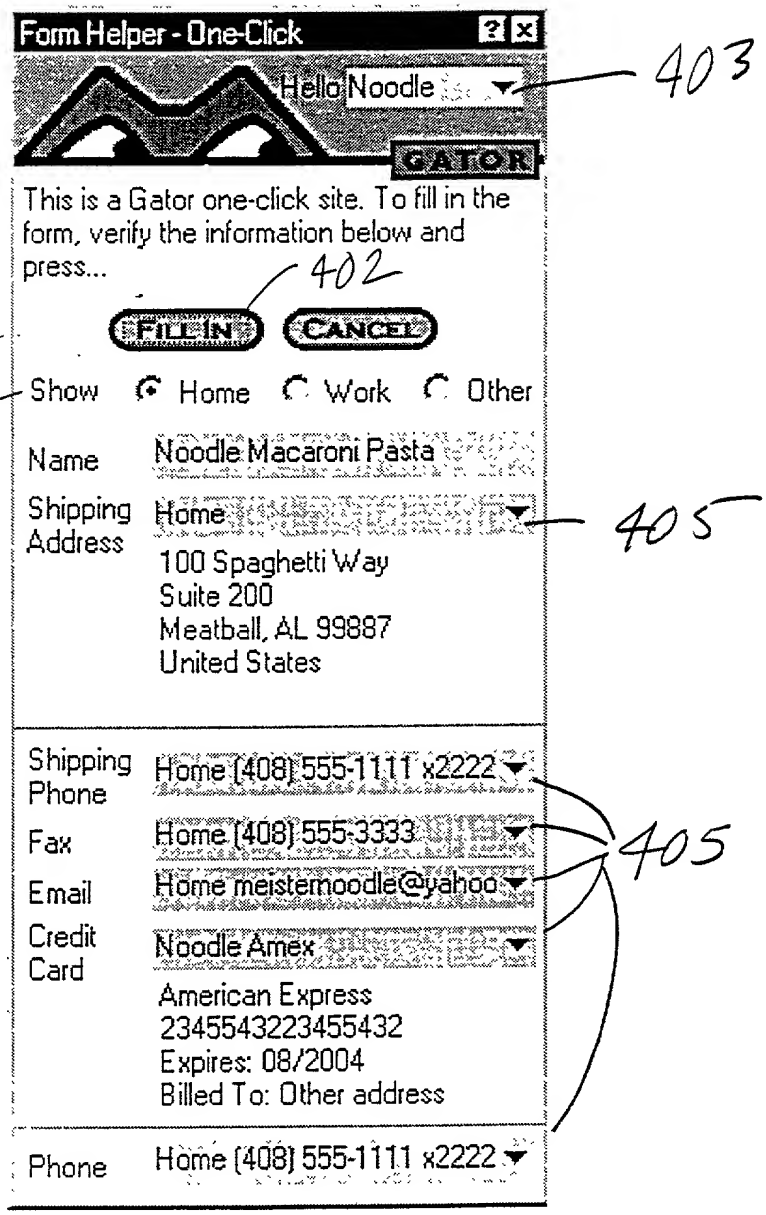

Form Helper - One-Click
Hello Noodle
GATOR
This is a Gator one-click site. To fill in the form, verify the information below and press...
FILL IN
CANCEL
Show
Home
Work
Other
Name
Noodle Macaroni Pasta
Shipping Address
Home
100 Spaghetti Way
Suite 200
Meatball, AL 99887
United States
Shipping Phone
Home (408) 555-1111 x2222
Fax
Home (408) 555-3333
Email
Home meistemoodle@yahoo
Credit Card
Noodle Amex
American Express
2345543223455432
Expires: 08/2004
Billed To: Other address
Phone
Home (408) 555-1111 x2222
401
402
403
404
405
405

FIG 5

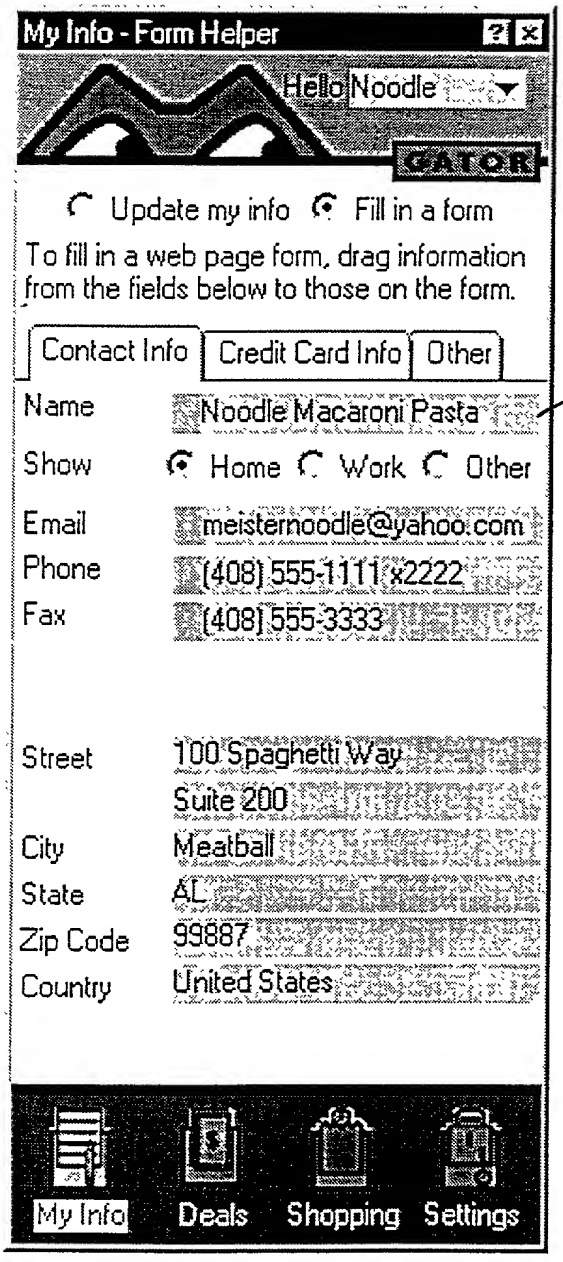
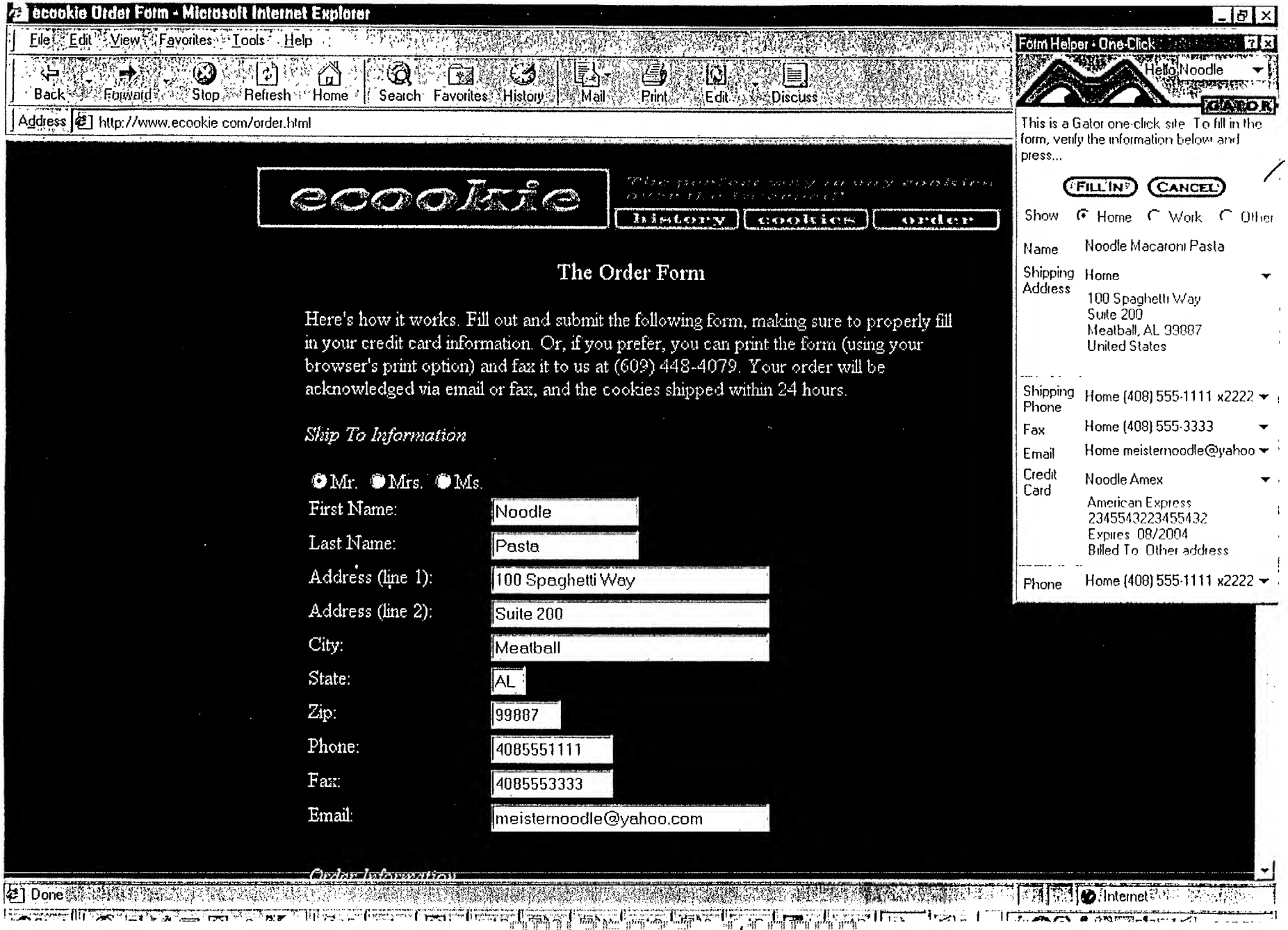

My Info - Form Helper
Hello Noodle
GATOR
Update my info
Fill in a form
To fill in a web page form, drag information from the fields below to those on the form.
Contact Info
Credit Card Info
Other
Name
Noodle Macaroni Pasta
Show
Home
Work
Other
Email
meisternoodle@yahoo.com
Phone
(408) 555-1111 x2222
Fax
(408) 555-3333
Street
100 Spaghetti Way
Suite 200
City
Meatball
State
AL
Zip Code
99887
Country
United States
My Info
Deals
Shopping
Settings
601
602

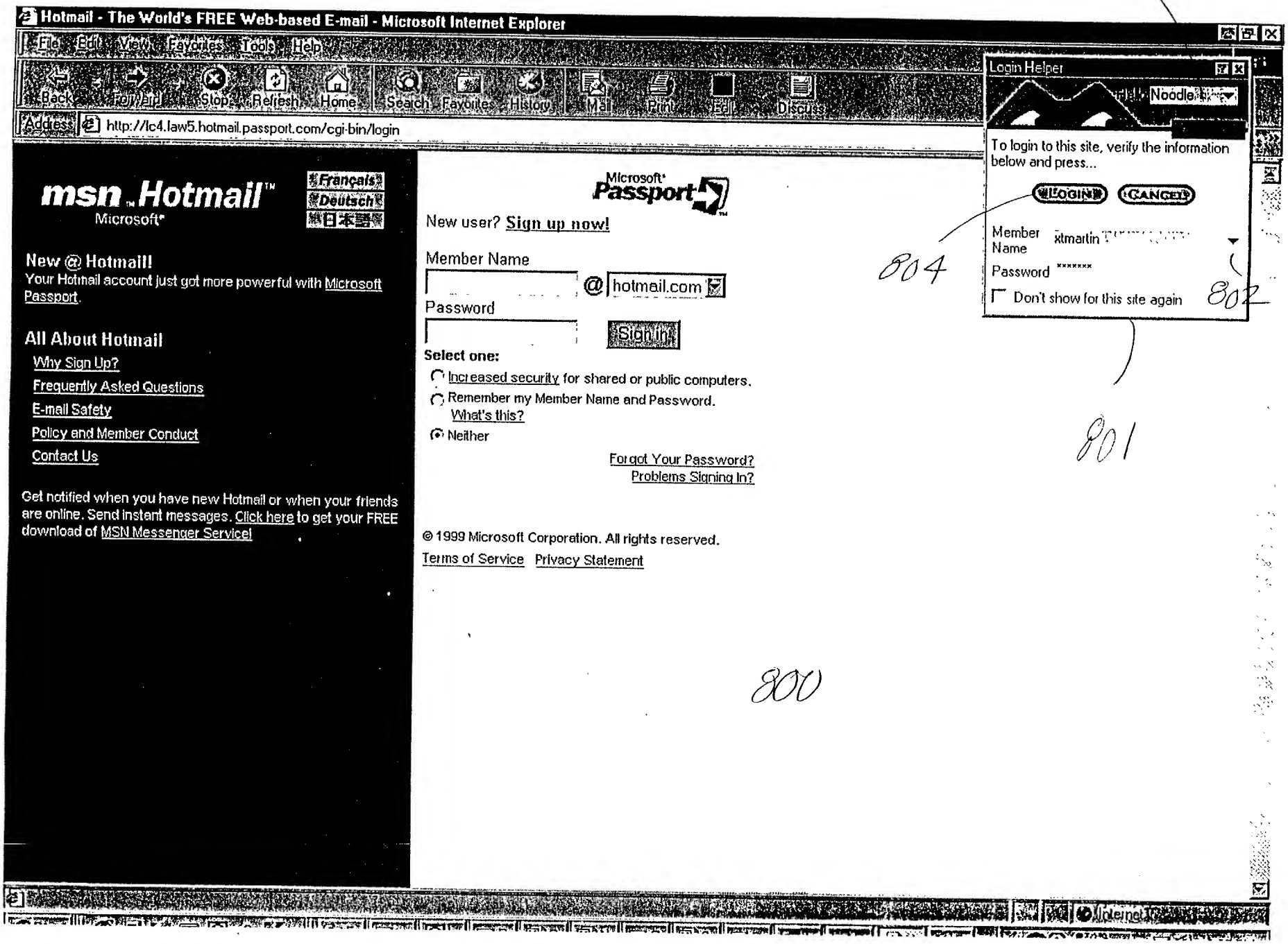
FIG 6


ecookie Order Form - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss
Address http://www.ecookie.com/order.html
ecookie
history
cookies
order
The Order Form
Here's how it works. Fill out and submit the following form, making sure to properly fill in your credit card information. Or, if you prefer, you can print the form (using your browser's print option) and fax it to us at (609) 448-4079. Your order will be acknowledged via email or fax, and the cookies shipped within 24 hours.
Ship To Information
Mr. Mrs. Ms.
First Name: Noodle
Last Name: Pasta
Address (line 1): 100 Spaghetti Way
Address (line 2): Suite 200
City: Meatball
State: AL
Zip: 99887
Phone: 4085551111
Fax: 4085553333
Email: meisternoodle@yahoo.com
Order Information
Done
Internet
Form Helper - One-Click
Hello Noodle
GATOR
This is a Gator one-click site. To fill in the form, verify the information below and press...
FILL IN
CANCEL
Show Home Work Other
Name Noodle Macaroni Pasta
Shipping Address Home
100 Spaghetti Way
Suite 200
Meatball, AL 99887
United States
Shipping Phone Home (408) 555-1111 x2222
Fax Home (408) 555-3333
Email Home meisternoodle@yahoo
Credit Card Noodle Amex
American Express
2345543223455432
Expires 08/2004
Billed To Other address
Phone Home (408) 555-1111 x2222

401

FIG-7

100


803
Hotmail - The World's FREE Web-based E-mail - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss
Address http://lc4.law5.hotmail.passport.com/cgi-bin/login
Login Helper
Noodle
To login to this site, verify the information below and press...
LOGIN
CANCEL
Member Name xtmartin
Password *******
Don't show for this site again
802
804
msn Hotmail
Microsoft
Français
Deutsch
日本語
New @ Hotmail!
Your Hotmail account just got more powerful with Microsoft Passport.
All About Hotmail
Why Sign Up?
Frequently Asked Questions
E-mail Safety
Policy and Member Conduct
Contact Us
Get notified when you have new Hotmail or when your friends are online. Send instant messages. Click here to get your FREE download of MSN Messenger Service!
Microsoft Passport
New user? Sign up now!
Member Name
@ hotmail.com
Password
Sign in
Select one:
Increased security for shared or public computers.
Remember my Member Name and Password.
What's this?
Neither
Forgot Your Password?
Problems Signing In?
© 1999 Microsoft Corporation. All rights reserved.
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801
800

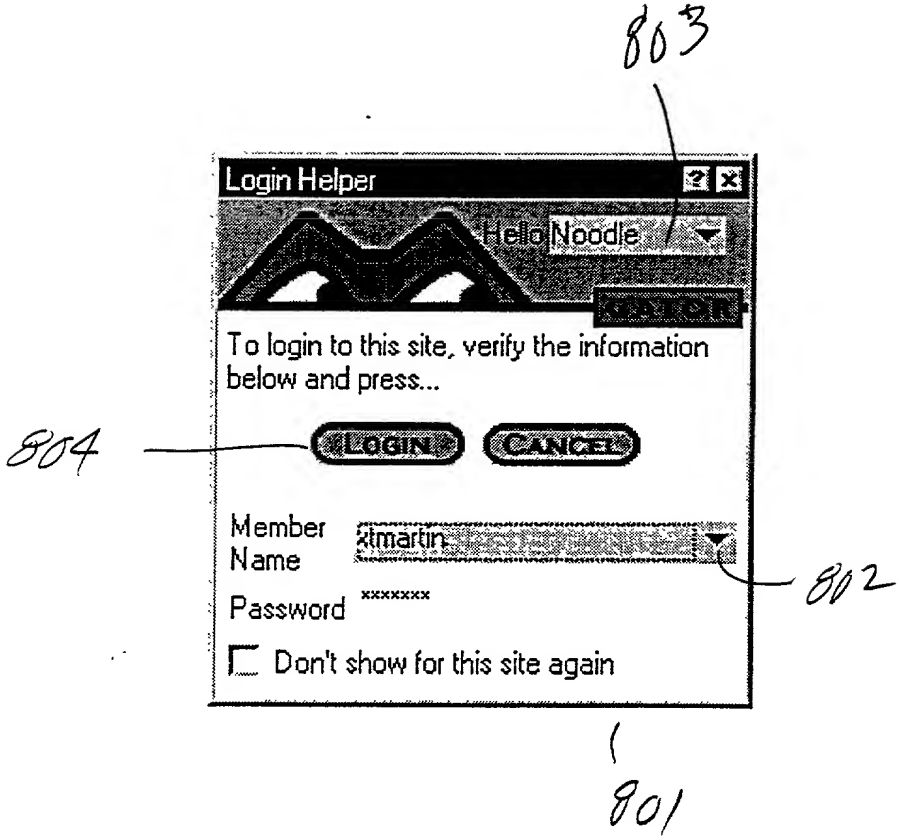
803
Login Helper
Hello Noodle
To login to this site, verify the information below and press...
804
LOGIN
CANCEL
Member Name
xtmartin
802
Password
****
Don't show for this site again
801

FIG 9

Attorney's Docket No.: 003824.P003

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below, next to my name.

I believe I am the original, first, and sole inventor (if only one name is listed below) or any original, first, and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

METHOD AND APPARATUS FOR AUTOMATIC FORM FILLING

the specification of which [X] is attached hereto.
[ ] was filed on _____ as
United States Application Number _____
or PCT International Application Number _____
and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claim(s), as amended by any amendment referred to above. I do not know and do not believe that the claimed invention was ever known or used in the United States of America before my invention thereof, or patented or described in any printed publication in any country before my invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, and that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns more than twelve months (for a utility patent application) or six months (for a design patent application) prior to this application.

I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d), of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s):

APPLICATION NUMBER	COUNTRY (OR INDICATE IF PCT)	DATE OF FILING (day, **month**, year)	PRIORITY CLAIMED UNDER 37 USC 119
			☐ No ☐ Yes
			☐ No ☐ Yes
			☐ No ☐ Yes

I hereby claim the benefit under Title 35, United States Code, Section 119(e) of any United States provisional application(s) listed below:

APPLICATION NUMBER	FILING DATE
60/107,791	November 10, 1998

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

APPLICATION NUMBER	FILING DATE	STATUS (ISSUED, PENDING, ABANDONED)

William E. Alford, Reg. No. 37,764; Farzad E. Amini, Reg. No. 42,261; Amy M. Armstrong, Reg. No. 42,265; Aloysius T. C. AuYeung, Reg. No. 35,432; William Thomas Babbitt, Reg. No. 39,591; Carol F. Barry, Reg. No. 41,600; Jordan Michael Becker, Reg. No. 39,602; Bradley J. Bereznak, Reg. No. 33,474; Michael A. Bernadicou, Reg. No. 35,934; Roger W. Blakely, Jr., Reg. No. 25,831; Gregory D. Caldwell, Reg. No. 39,926; Ronald C. Card, Reg. No. 44,587; Thomas M. Coester, Reg. No. 39,637; Michael Anthony DeSanctis, Reg. No. 39,957; Daniel M. De Vos, Reg. No. 37,813; Robert Andrew Diehl, Reg. No. 40,992; Matthew C. Fagan, Reg. No. 37,542; Tarek N. Fahmi, Reg. No. 41,402; James Y. Go, Reg. No. 40,621; James A. Henry, Reg. No. 41,064; Willmore F. Holbrow III, Reg. No. 41,845; Sheryl Sue Holloway, Reg. No. 37,850; George W Hoover II, Reg. No. 32,992; Eric S. Hyman, Reg. No. 30,139; Dag H. Johansen, Reg. No. 36,172; William W. Kidd, Reg. No. 31,772; Eric T. King, Reg. No. 44,188; Erica W. Kuo, Reg. No. 42,775; Michael J. Mallie, Reg. No. 36,591; Paul A. Mendonsa, Reg. No. 42,879; Darren J. Milliken, Reg. No. 42,004; Chun M. Ng, Reg. No. 36878; Thien T. Nguyen, Reg. No. 43,835; Thinh V. Nguyen, Reg. No. 42,034; Dennis A. Nicholls, Reg. No. 42,036; Kimberley G. Nobles, Reg. No. 38,255; Lisa A. Norris, Reg. No. 44,976; Daniel E. Ovanezian, Reg. No. 41,236; Babak Redjaian, Reg. No. 42,096; William F. Ryann, Reg. No. 44,313; James H. Salter, Reg. No. 35,668; William W. Schaal, Reg. No. 39,018; James C. Scheller, Reg. No. 31,195; Jeffrey S. Smith, Reg. No. 39,377; Maria McCormack Sobrino, Reg. No. 31,639; Stanley W. Sokoloff, Reg. No. 25,128; Judith A. Szepesi, Reg. No. 39,393; Vincent P. Tassinari, Reg. No. 42,179; Edwin H. Taylor, Reg. No. 25,129; George G. C. Tseng, Reg. No. 41,355; Joseph A. Twarowski, Reg. No. 42,191; Lester J. Vincent, Reg. No. 31,460; Glenn E. Von Tersch, Reg. No. 41,364; John Patrick Ward, Reg. No. 40,216; Charles T. J. Weigell, Reg. No. 43,398; Kirk D. Williams, Reg. No. 42,229; James M. Wu, Reg. No. P45,241; Steven D. Yates, Reg. No. 42,242; Ben J. Yorks, Reg. No. 33,609; and Norman Zafman, Reg. No. 26,250; my attorneys; and Andrew C. Chen, Reg. No. 43,544; Justin M. Dillon, Reg. No. 42,486; Paramita Ghosh, Reg. No. 42,806; Sang Hui Kim, Reg. No. 40,450; and John F. Travis, Reg. No. 43,203; my patent agents.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Sole/First Inventor (given name, family name) **Mark E. Pennell**

Inventor's Signature _____ Date _____

Residence _____ Citizenship _____
(City, State) *(Country)*

P. O. Address _____

_____

Full Name of Second/Joint Inventor (given name, family name) **Anthony Martin**

Inventor's Signature _____ Date _____

Residence _____ Citizenship _____
(City , State) *(Country)*

P. O. Address _____

_____

Full Name of Third/Joint Inventor (given name, family name) _____

Inventor's Signature _____ Date _____

Residence _____ Citizenship _____
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P. O. Address _____

_____

Full Name of Fourth/Joint Inventor (given name, family name) _____

Inventor's Signature _____ Date _____

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P. O. Address _____

_____

Full Name of Fifth/Joint Inventor (given name, family name) _____

Inventor's Signature _____ Date _____

Residence _____ Citizenship _____
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P. O. Address _____

_____